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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,640

08/15/2006

Yoshii Morishita

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38834

7590

08/07/2009

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EXAMINER

BOHATY, ANDREW K

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

08/07/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,640	<b>Applicant(s)</b> MORISHITA ET AL.	
	<b>Examiner</b> Andrew K. Bohaty	<b>Art Unit</b> 4132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2005/10/18; 2005/12/19; 2006/05/12; 2006/12/12</u> .          | 6) <input type="checkbox"/> Other: ____.                          |



## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 5 is indefinite because Formula (III) is not found in claim 2; therefore, claim 5 does not further limit claim 2. The claim will be as interrupted as Formula (III) found in claim 3, not claim 2.

### ***Claim Rejections - 35 USC § 102***

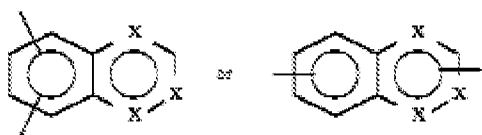
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

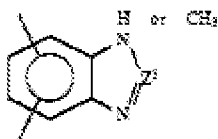
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sezi et al. (US 5807969) (hereafter "Sezi").
6. Regarding claim 1, Sezi discloses a polymer (column 3 lines 1-14) comprised of monomer of the following structure, M-CO-R\*-CO-M, wherein R\* can be

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where X=CH or N producing a quinoline structure or



where

where Z is N (both in column 4 lines 1-9 and

41-50). The polymer produced from these two monomer would be a copolymer containing a quinoline monomer and a benzotriazole monomer.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sezi et al. (US 5807969) (hereafter "Sezi") as applied to claim 1 above, and further in view of Nakamura et al. (US 5427858) (hereafter "Nakamura").

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10. Regarding claim 6, Sezi teaches the use of polymers as insulators and protective layers in microelectronics and teaches the polymers can be applied to electronic components.

11. Sezi does not teach the use of the polymer in an electroluminescent device.

12. Nakamura teaches the use of a insulting polymer as a protective layer in an electroluminescent device (a microelectronic device) (column 2 lines 27-35) to provide an electroluminescent device that structurally has a long life (column 1 lines 22-24).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made use the polymer taught by Sezi as a protective layer in an electroluminescent device. Sezi teaches the polymers can be used in microelectronics as insulators and protective layers and Nakamura teaches the use of insulating polymers in protective layers in an electroluminescent device; therefore, it would be obvious to use the polymers taught by Sezi as a protective layer in an electroluminescent device, which is a microelectronic device. The motivation would have been to provide an electroluminescent device that structurally has a long life.

14. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. (US 2002/0033910) (hereafter "Ohnishi") in view of O'Dell et al. (WO 01/49768) (hereafter "O'Dell").

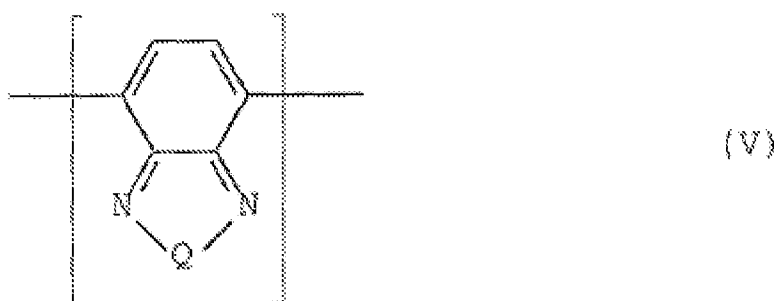
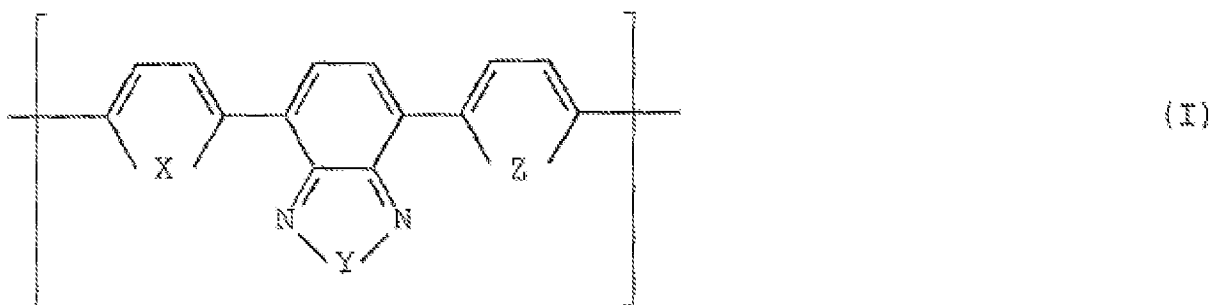
15. Regarding claims 1, 3 and 5, Ohnishi teaches a fluorescent polymer (abstract) that can contain a quinoline monomer unit (formula (1), where  $Ar_1$  is a quinoline group, k

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is zero, paragraphs [0019], [0020], and [0039] where the quinoline groups are under formula 9).

16. Ohnishi does not teach the polymer also containing a benzotriazole monomer.

17. O'Dell teaches a luminescent polymer (abstract) which contains a benzotriazole monomer (pages 6 and 9, formulae (I) and (V) where both Z and Q are NR (paragraphs after formula (I) and (V) on pages 6 and 9 and R is an alkyl or aryl group) (claim 3). As a R group for N, O'Dell teaches alkyl or aryl group (page 6 first paragraph) and as an aryl group it would be obvious to select phenyl (claim 5). O'Dell further teaches phenyl as a preferred aryl group (page 7, second to last paragraph). Relating to applicant's claims, O'Dell teaches formula (III) wherein p is zero and Z is  $-R^1$  and  $R^1$  is an alkyl or aryl group (claim 3) and more specifically  $-R^1$  is a phenyl group (claim 5). O'Dell teaches the benzotriazole containing polymer provides an electroluminescent device with good efficiency, lifetime and red emission (page 6, second paragraph).



18. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify polymer of Ohnishi to contain the benzotriazole monomer taught by O'Dell, wherein the R group connected to the N atom is phenyl and p is zero. The motivation would have been to provide an electroluminescent device with good efficiency, lifetime and red emission.

19. Regarding claims 2 and 4, Ohnishi teaches quinoline monomer units that correspond to applicant's formula (I) (pages 5 and 6, structures after formula 9). Ohnishi teaches formula (1) where k can be zero, allow formula (1) to equal -Ar<sub>1</sub>- this means the Ar<sub>1</sub> units (quinoline units) are connected through a single bond (equivalent to A equally a single bond in the applicant's claim). Ohnishi teaches the quinoline groups contains substituents (R groups) and these R groups can be hydrogen (a is zero in applicant's claim), alkyl groups having 1 to 20 carbon atoms, which can be branched,



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linear, or cyclic (paragraphs [0040] and [0053]) or aryl groups having 6 to 10 carbon atoms (phenyl and naphthyl, paragraph [0040] and [0047]). Regarding applicant's formula (II), since b can be zero, D is not required, but Ohnishi teaches that -O-, -S-, -NR-, and -SiR<sub>2</sub>- can be used as a repeating unit (paragraph [0017], formula 17).

20. Regarding claim 6, O'Dell teaches the use of the luminescent polymer in a polymer LED device (abstract and paragraph [0068]).

### ***Double Patenting***

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

22. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

23. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

24. Claims 1-3 and 5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 6 of

copending Application No. 10/561019 (Morishita et al.) (US 2006/0287498) (hereafter "Morishita") in view of O'Dell et al. (WO 01/49768) (hereafter "O'Dell").

25. Regarding claims 1-3 and 5 of the instant application with regards to claim 6 of Morishita, Morishita claims a copolymer containing a quinoline monomer, wherein the quinoline monomer contains the same limitations as claim 2 of the instant application.

26. Morishita does not claim a copolymer containing a benzotriazole monomer.

27. O'Dell teaches a luminescent polymer (abstract) which contains a benzotriazole monomer (pages 6 and 9, formulae (I) and (V) where both Z and Q are NR (paragraphs after formula (I) and (V) on pages 6 and 9 and R is an alkyl or aryl group) (claim 3). As a R group for N, O'Dell teaches alkyl or aryl group (page 6 first paragraph) and as an aryl group it would be obvious to select phenyl (claim 5). O'Dell further teaches phenyl as a preferred aryl group (page 7, second to last paragraph). Relating to applicant's claims, O'Dell teaches formula (III) wherein p is zero and Z is  $-R^1$  and  $R^1$  is an alkyl or aryl group (claim 3) and more specifically  $-R^1$  is a phenyl group (claim 5). O'Dell teaches the benzotriazole containing polymer provides an electroluminescent device with good efficiency, lifetime and red emission (page 6, second paragraph).

28. Given the teachings of O'Dell it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quinoline copolymer of Morishita to comprise the benzotriazole monomer taught by O'Dell to arrive at the claimed inventions. The motivation would have been to provide an electroluminescent device with good efficiency, lifetime and red emission.

29. This is a provisional obviousness-type double patenting rejection.

30. Claims 1-6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, and 6 of copending Application No. 10/553751 (Morishita et al.) (US 2007/0027299) (hereafter "Morishita '299") in view of et al. (WO 01/49768) (hereafter "O'Dell").

31. Regarding claims 1, 3, and 5 of the instant application with regards to claim 1 of Morishita, Morishita claims a copolymer containing a quinoline monomer.

32. Morishita does not claim a copolymer containing a benzotriazole monomer.

33. O'Dell teaches a luminescent polymer (abstract) which contains a benzotriazole monomer (pages 6 and 9, formulae (I) and (V) where both Z and Q are NR (paragraphs after formula (I) and (V) on pages 6 and 9 and R is an alkyl or aryl group) (claim 3). As a R group for N, O'Dell teaches alkyl or aryl group (page 6 first paragraph) and as an aryl group it would be obvious to select phenyl (claim 5). O'Dell further teaches phenyl as a preferred aryl group (page 7, second to last paragraph). Relating to applicant's claims, O'Dell teaches formula (III) wherein p is zero and Z is  $-R^1$  and  $R^1$  is an alkyl or aryl group (claim 3) and more specifically  $-R^1$  is a phenyl group (claim 5). O'Dell teaches the benzotriazole containing polymer provides an electroluminescent device with good efficiency, lifetime and red emission (page 6, second paragraph).

34. Given the teachings of O'Dell it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the quinoline copolymer of Morishita to comprise the benzotriazole monomer taught by O'Dell to arrive at the claimed inventions. The motivation would have been to provide an electroluminescent device with good efficiency, lifetime and red emission.

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35. Regarding claim 2 of the instant application with regards to claim 2 of Morishita '299, claim 2 only differs for the same reasons claim 1 of the instant application differs from claim 1 of Morishita '299 ; therefore, claim 2 of the instant application will be modified in the same way claim 1 of the instant application was modified to arrive at the claimed invention.

36. Regarding claim 4 of the instant application with regards to claim 4 of Morishita '299, claim 4 only differs for the same reasons claim 1 of the instant application differs from claim 1 of Morishita '299 ; therefore, claim 4 of the instant application will be modified in the same way claim 1 of the instant application was modified to arrive at the claimed invention.

37. Regarding claim 6 of the instant application with regards to claim 6 of Morishita '299, claim 6 only differs for the same reasons claim 1 of the instant application differs from claim 1 of Morishita '299 ; therefore, claim 6 of the instant application will be modified in the same way claim 1 of the instant application was modified to arrive at the claimed invention.

38. This is a provisional obviousness-type double patenting rejection.

### ***Conclusion***

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al. (US 20020045065) discloses the use of benzotriazoles in electroluminescent devices.

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40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew K. Bohaty whose telephone number is (571)270-1148. The examiner can normally be reached on Monday through Thursday 7:30 am to 5:00 pm EST and every other Friday from 7:30 am to 4 pm EST.

41. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael LaVilla can be reached on (571)272-1539. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

42. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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